

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

REC'D 04 OCT 2004

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Applicant's or agent's file reference CDM/P61500/001	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB 03/03690	International filing date (day/month/year) 22.08.2003	Priority date (day/month/year) 23.08.2002
International Patent Classification (IPC) or both national classification and IPC C07H19/06		
Applicant SOLEXA LIMITED		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
  - ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of    sheets.

3. This report contains indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  11.03.2004	Date of completion of this report  04.10.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  de Nooy, A  Telephone No. +31 70 340-2338  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/03690**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-54 as originally filed

**Claims, Numbers**

1-60 as originally filed

**Drawings, Sheets**

1-4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-60
	No: Claims	
Inventive step (IS)	Yes: Claims	1-60
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-60
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V****Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: WO9957321

D2: WO0229003

2. Novelty (Article 33(2) PCT)

Documents D1 and D2 disclose nucleoside analogues having a base attached to a detectable label via a cleavable linker where the cleaving of the linker is done either photocemically or under acidic or alkaline conditions. In the present application, the linker can be cleaved using various phosphine containing reagents. For this to be possible, the linker must contain one of the structures present in claim 1. In the linkers of D1 and D2, such a structure is not present, thus claims 1-60 are novel.

5. Inventive step (Article 33(3) PCT)

Document D1, which is considered to represent the most relevant state of the art, discloses nucleoside analogues having a base attached to a detectable label via a cleavable linker where the cleaving of the linker is done either photocemically or under acidic or alkaline conditions for the sequencing of nucleic acids from which the subject-matter of claims 1-60 differs in that a different type of linker is used which is cleaved under different conditions using various phosphine containing reagents. The use is also for sequencing of nucleic acids.

The problem to be solved by the present invention may therefore be regarded as the provision of further compounds and methods for the sequencing of nucleic acids.

The solution proposed in claims 1-60 of the present application is considered as involving an inventive step for the following reasons:

It is not obvious for the skilled man to apply a linker which is cleavable with phosphine reagents. In D1, there is no incentive to do so.